Weiss Associates Environmental and Geologic Services

5500 Shellmound Street, Emeryville, CA 94608-2411 Fax: 510-547-5043 Phone: **510-450-6000**

ST D814

November 22, 1994

Brian Oliva
Alameda County Department of Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502

Re: Shell Service Station
WIC #204-2495-0101
1800 Powell Street
Emeryville, California
WA Job #81-0794-104

Dear Mr. Oliva:

This letter describes recently completed and anticipated activities at the Shell service station referenced above (Figure 1). This status report satisfies the quarterly reporting requirements prescribed by California Administrative Code Title 23 Waters, Chapter 3, Subchapter 16, Article 5, Section 2652.d. Included below are descriptions and results of activities performed in the third quarter 1994 and proposed work for the fourth quarter 1994.

Third Quarter 1994 Activities:

- Blaine Tech Services, Inc. (BTS) of San Jose, California measured ground water depths and collected ground water samples from the site wells. BTS' report describing these activities and the analytic report for the ground water samples are included as Attachment A.

- BTS sampled well S-8 for total dissolved solids (TDS). The sample contained 4,500 parts per million (ppm) TDS, above the Regional Water Quality Control Board's threshold of 3,00 ppm for domestic water supply.

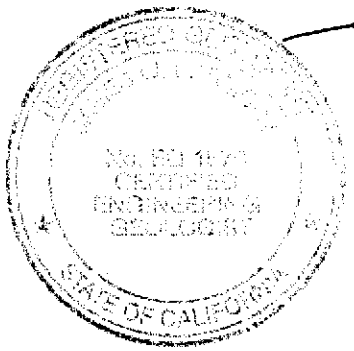
- Weiss Associates (WA) calculated ground water elevations, compiled the analytic data (Table 1) and prepared a ground water elevation contour map (Figure 2).

Anticipated Fourth Quarter 1994 Activities:

WA will submit a report presenting the results of the fourth quarter 1994 ground water sampling and ground water depth measurements. The report will include tabulated chemical analytic results, ground water elevations and a ground water elevation contour map.

Please call if you have any questions.

Sincerely,
Weiss Associates



J. Michael Asport
Staff Scientist I

James W. Carmody, C.E.G.
Senior Project Hydrogeologist

JXW/JWC:jw
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Attachments: A - Blaine Tech's Ground Water Monitoring Report

cc: Dan Kirk, Shell Oil Company, P.O. Box 4023, Concord, California 94524
Kevin Graves, Regional Water Quality Control Board - San Francisco Bay Region, 2101 Webster Street, Suite 500, Oakland, California 94612

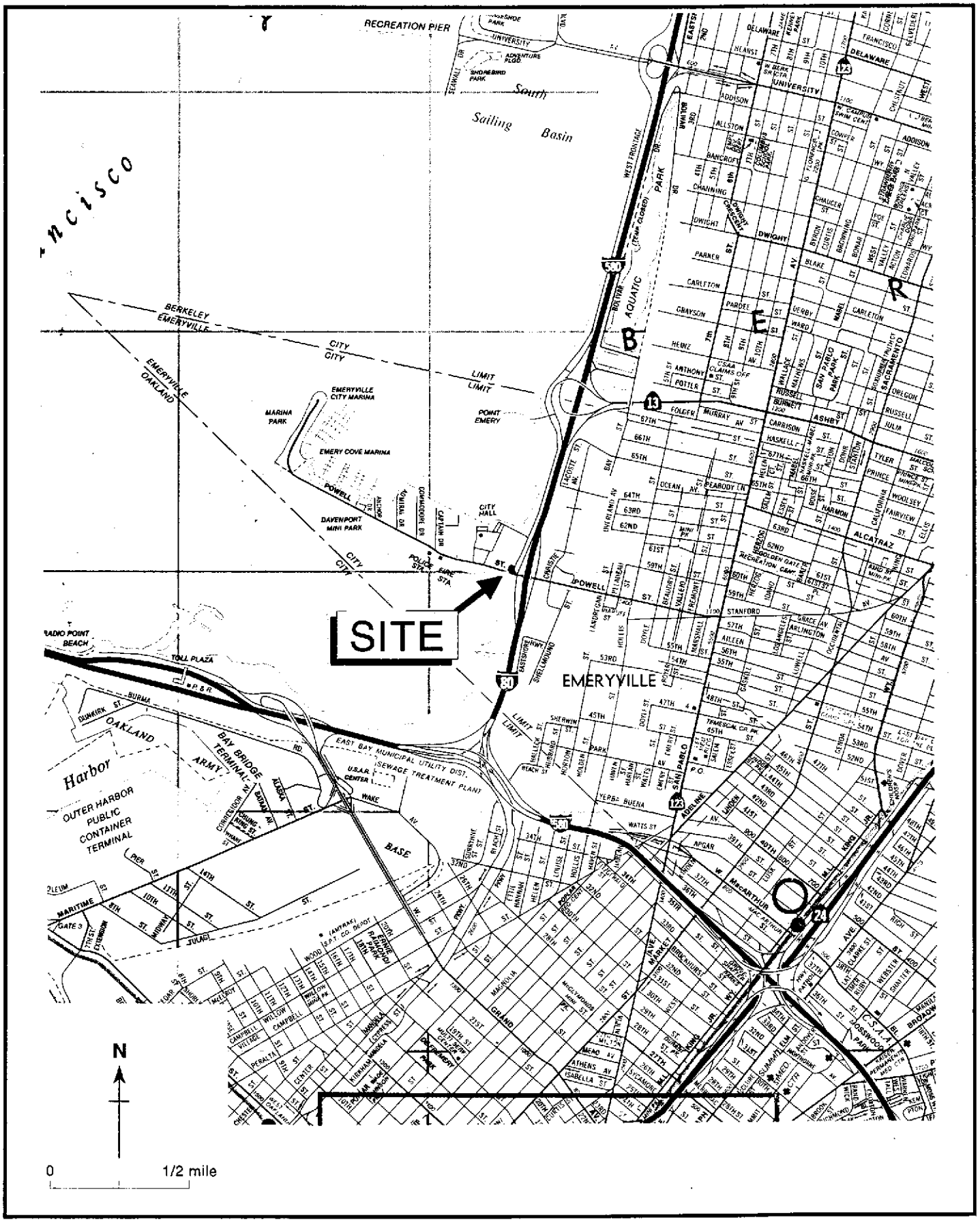

Figure 1. Site Location Map - Shell Service Station WIC# 204-2495-01, 1800 Powell Street, Emeryville, California

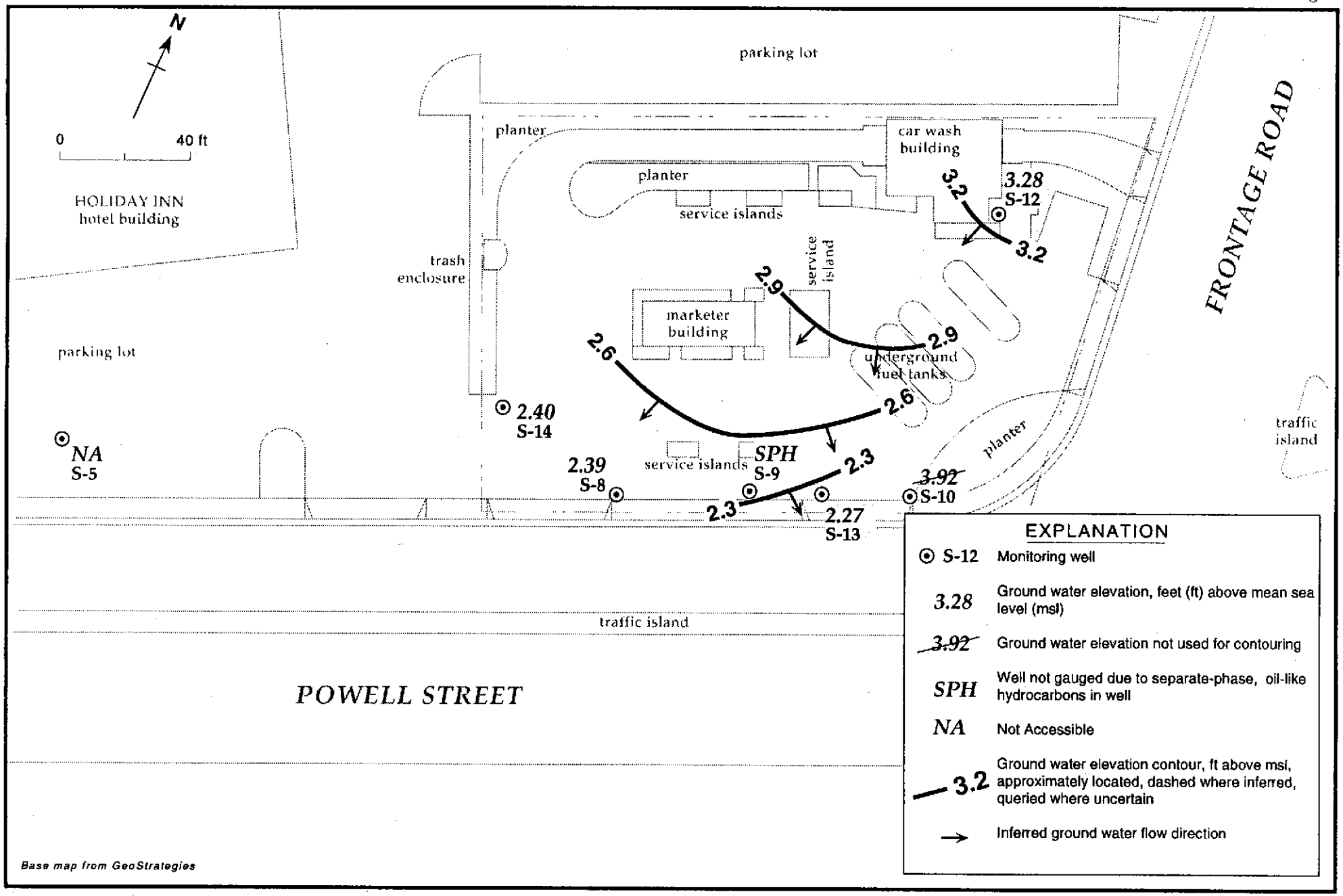

Figure 2. Monitoring Well Locations and Ground Water Elevation Contours - August 8, 1994 - Shell Service Station - WIC# 204-2495-0106, 1800 Powell Street, Emeryville, California

Table 1. Ground Water Elevations and Analytic Results - Shell Service Station WIC# 204-2495-0101, 1800 Powell Street, Emeryville, California

Well ID	Sampling Date	Top-of-Casing (ft msl)	Depth to Water (ft)	Separate-Phase Hydrocarbon Thickness (ft)	Ground Water Elevation (ft msl)	TDS	TPH-G	TPH-D	B	T	E	X
						<---------- parts per billion (µg/L) ---------->						
S-5	10/26/84	11.72	---	---	---	---	3,000	---	660	20	20	70
	02/09/85		---	---	---	---	2,800	---	740	20	20	140
	04/27/85		---	---	---	---	4,300	---	750	10	20	<30
	07/06/85		---	---	---	---	1,500	---	300	8.0	7.0	9.0
	10/24/85		---	---	---	---	2,100	---	760	10	40	50
	01/03/86		---	---	---	---	1,300	---	520	9.0	8.0	10
	07/05/86		8.36	---	3.36	---	1,400	---	500	10	4.0	<10
	10/18/86		---	---	---	---	4,200	---	1,100	9.0	14	7.0
	01/13/87		---	---	---	---	4,500	6,100	1,100	15	30	25
	07/07/87		9.15	---	2.57	---	3,200	---	1,000	16	9.0	12
	10/10/87		9.67	---	2.05	---	1,700	---	16	5.7	5.2	8.9
	02/11/88		9.00	---	2.72	---	1,300	---	300	5.0	<5	<5
	05/10/88		8.61	---	3.11	---	1,900	---	490	<0.5	<5	<5
	08/31/88		9.61	---	2.11	---	6,700	---	760	26	<25	<25
	12/03/88		9.47	---	2.25	---	2,900	---	890	5.3	7.3	13
	02/16/89		8.29	---	3.43	---	1,300	---	280	3.0	3.4	9.4
	08/10/89		9.30	---	2.42	---	1,700	---	530	5.5	<5	5.8
	11/11/89		9.42	---	2.30	---	---	---	---	---	---	---
	02/21/94		7.95	---	3.77	---	1,000	---	250	<5	<5	<5
	02/21/94[dup]		7.95	---	3.77	---	1,300	---	220	<5	<5	11
	05/16/94		8.00	---	3.72	---	1,200	---	230	<5	<5	<5
	08/09/94[a]		---	---	---	---	---	---	---	---	---	---
S-6[b]	04/27/85		---	---	---	---	6,500	---	2,400	30	50	210
	07/06/85		---	---	---	---	3,700	---	1,700	34	55	200
	10/24/85		---	---	---	---	<50	---	23	<0.5	<5	10
	11/09/85[b]		---	---	---	---	---	---	---	---	---	---
S-7[b]	10/26/84		---	---	---	---	50	---	1.1	<1	<1	4
	02/09/85		---	---	---	---		---	0.90	<1	<1	<3
	04/27/85		---	---	---	---	<50	---	<1	<1	<1	<3
	07/06/85		---	---	---	---	70	---	2.2	<1	<1	<3
	10/24/85		---	---	---	---	6,200	---	2,200	130	190	660
	11/09/85[b]		---	---	---	---	---	---	---	---	---	---
S-8	10/26/84	12.76	---	---	---	---	1,000	---	610	9.0	1.0	42
	02/09/85		---	---	---	---	500	---	160	5.0	<2	17
	04/27/85		---	---	---	---	2,700	---	1500	20	10	40
	07/06/85		---	---	---	---	440	---	180	5.0	2.0	12
	10/24/85		---	---	---	---	2,000	---	1,100	17	5.0	70
	01/03/86		---	---	---	---	1,900	---	1,300	20	<10	70
	07/05/86		9.50	---	3.26	---	1,600	---	920	30	<10	60
	10/18/86		---	---	---	---	1,400	---	640	<10	<10	30
	01/13/87		---	---	---	---	670	760	190	5.8	<0.5	19

--- Table 1 continues on next page ---

Table 1. Ground Water Elevations and Analytic Results - Shell Service Station WIC# 204-2495-0101, 1800 Powell Street, Emeryville, California (continued)

Well ID	Sampling Date	Top-of-Casing (ft msl)	Depth to Water (ft)	Separate-Phase Hydrocarbon Thickness (ft)	Ground Water Elevation (ft msl)	TDS	TPH-G	TPH-D	B	T	E	X
						<---------- parts per billion (µg/L) ---------->						
	04/22/87		---	---	---	---	2,400	---	740	54	5.7	59
	07/07/87		10.45	---	2.31	---	1,100	---	450	15	<2.5	42
	10/10/87		10.83	---	1.93	---	340	---	4.0	0.60	<0.5	17
	02/11/88		10.44	---	2.32	---	<1,000	---	260	<10	<10	11
	05/10/88		10.17	---	2.59	---	1,800	---	700	14	<5	46
	08/31/88 SPH		10.81	---	1.95	---	---	---	---	---	---	---
	12/03/88		10.81	---	1.95	---	960	---	250	4.3	<2.5	14
	02/16/89		9.65	---	3.11	---	2,700	---	800	35	10	83
	05/26/89		10.46	---	2.3	---	960	---	710	25	84	80
	08/10/89		10.59	---	2.17	---	1,300	---	630	17	<5	46
	11/11/89		10.29	---	2.47	---	910	---	180	8	<2.5	15
	02/21/94		9.52	---	3.24	2,910	3,200	---	480	52	<5	130
	05/16/94		9.49	---	3.27	---	1,000	---	220	7.3	<5	28
	05/16/94 Dup		9.49	---	3.27	---	1,000	---	280	10	<5	29
	08/09/94		**10.37**	---	**2.39**	**4,500**	**400**	---	**27**	**6.6**	**<0.5**	**18**
S-9	10/26/84 SPH	12.75	---	---	---	---	---	---	---	---	---	---
	02/09/85 SPH		---	1.30	---	---	---	---	---	---	---	---
	04/27/85 SPH		---	1.25	---	---	---	---	---	---	---	---
	07/06/85 SPH		---	1.20	---	---	---	---	---	---	---	---
	10/24/85 SPH		---	---	---	---	---	---	---	---	---	---
	01/03/86 SPH		---	---	---	---	---	---	---	---	---	---
	04/11/86 SPH		---	---	---	---	---	---	---	---	---	---
	07/05/86 SPH		9.67	---	3.08	---	---	---	---	---	---	---
	10/18/86 SPH		---	---	---	---	---	---	---	---	---	---
	01/13/87 SPH		---	---	---	---	---	---	---	---	---	---
	04/22/87 SPH		---	---	---	---	---	---	---	---	---	---
	07/07/87 SPH		---	---	---	---	---	---	---	---	---	---
	10/10/87 SPH		22.30	---	-9.55	---	---	---	---	---	---	---
	02/24/94 SPH		---	---	---	---	---	---	---	---	---	---
	05/16/94 SPH		---	1.5	---	---	---	---	---	---	---	---
	08/09/94 SPH		**11.80**	**2.0**	**0.95**	---	---	---	---	---	---	---
S-10	10/26/84	12.58	---	---	---	---	700,000	---	37,000	100,000	20,000	110000
	02/09/85		---	---	---	---	6,500	---	480	700	100	1800
	04/27/85		---	---	---	---	13,000	---	1,300	500	600	3700
	07/06/85		---	---	---	---	14,000	---	1,300	310	270	2400
	10/24/85		---	---	---	---	4,200	---	580	34	4	440
	01/03/86		---	---	---	---	1,700	---	360	10	7.8	170
	04/11/86 SPH		---	0.01	---	---	---	---	---	---	---	---
	07/05/86 SPH		9.16	0.01	3.42	---	---	---	---	---	---	---
	10/18/86 SPH		---	0.03	---	---	---	---	---	---	---	---
	01/13/87 SPH		---	0.03	---	---	---	---	---	---	---	---

--- Table 1 continues on next page ---

Table 1. Ground Water Elevations and Analytic Results - Shell Service Station WIC# 204-2495-0101, 1800 Powell Street, Emeryville, California (continued)

Well ID	Sampling Date	Top-of-Casing (ft msl)	Depth to Water (ft)	Separate-Phase Hydrocarbon Thickness (ft)	Ground Water Elevation (ft msl)	TDS	TPH-G	TPH-D	B	T	E	X
						<---------- parts per billion (µg/L) ---------->						
	04/22/87[SPH]		---	0.01	---	---	---	---	---	---	---	---
	07/07/87[SPH]		9.41	0.03	3.17	---	---	---	---	---	---	---
	10/10/87[SPH]		7.77	---	4.81	---	---	---	---	---	---	---
	02/11/88		6.41	---	6.17	---	1,200	---	470	16	<5	14
	05/10/88		9.04	---	3.54	---	1,100	---	100	6	4	19
	08/31/88[SPH]		9.38	0.01	3.20	---	---	---	---	---	---	---
	12/03/88[SPH]		6.89	---	5.69	---	---	---	---	---	---	---
	02/16/89		7.34	---	5.24	---	530	---	89	8.5	1.6	4.5
	05/28/89		6.60	---	5.98	---	240	---	65	3.8	2.2	8.6
	08/10/89		9.09	---	3.49	---	250	---	23	4.1	<1	6.4
	11/11/89[c]		6.58	---	6	---	320	---	1.6	1.3	1.4	6.2
	02/21/94		8.32	---	4.26	---	1,400	---	190	9.9	<2.5	19
	05/16/94		8.35	---	4.23	---	300	---	45	8.6	6.2	19
	08/08/94		**8.66**	**---**	**3.92**	**---**	**700**	**---**	**57**	**14**	**<0.5**	**9.3**
S-12	07/06/85	12.84	8.22	---	---	---	<250	2,200	0.71	<0.5	<0.5	<3.6
	11/16/85		---	---	---	---	<250	1,400	18	<2	<2	<5
	01/03/86		---	---	---	---	<250	---	24	2	<2	<5
	07/05/86		8.27	---	4.57	---	80	---	15	0.7	<0.5	2
	10/18/86		---	---	---	---	150	---	12	9	<0.5	3.6
	01/13/87		---	---	---	---	120	1,000	3.6	0.8	<0.5	2.9
	04/22/87		---	---	---	---	100	820	3.7	3.8	0.8	11
	07/07/87		9.5	---	3.34	---	70	---	2.5	0.8	<0.5	2.4
	10/10/87		9.9	---	2.94	---	220	2,500	2.1	0.7	<0.5	1.2
	02/11/88		9.43	---	3.41	---	110	2,500	0.8	<0.5	<0.5	1.3
	05/10/88		8.65	---	4.19	---	140	3,800[d]	0.8	0.8	<0.5	2.5
	08/31/88		9.86	---	2.98	---	190	2,600[d]	3	15	0.5	4.5
	12/03/88		9.93	---	2.91	---	180	3,900[d]	1.2	1	1	7.7
	02/16/89		8.08	---	4.76	---	350[e]	2,100[d]	0.6	<0.5	0.5	5.5
	05/28/89		9.08	---	3.76	---	290	2,200	2	1.6	4.4	6
	08/10/89		9.35	---	3.49	---	240	720	0.7	<0.5	<0.5	1.1
	11/11/89		9.28	---	3.56	---	210[e]	4,100	0.7	0.5	<0.5	3.4
	02/21/94		8.22	---	4.62	---	240[f]	2,200[g]	0.7	<0.5	<0.5	3.6
	05/16/94		8.92	---	3.92	---	96	2,200	1.5	<0.5	<0.5	2.0
	08/08/94		**---**	**---**	**---**	**---**	**110[h]**	**3,500[i]**	**<0.5**	**<0.5**	**<0.5**	**<0.5**
S-13	07/06/85	12.59	9.26	---	---	---	700	3,600	200	<5	<5	45
	11/16/85		---	---	---	---	1,900	2,000	700	160	70	340
	01/03/86		---	---	---	---	2,800	---	1,400	130	10	500
	07/05/86		9.47	---	3.12	---	3,100	---	1,800	60	40	270
	10/23/86		---	---	---	---	3,400	---	1,500	28	28	250
	01/13/87		---	---	---	---	1,900	900	830	15	<10	99
	04/22/87		---	---	---	---	2,900[e]	770[j]	1,100	20	30	140

--- Table 1 continues on next page ---

Table 1. Ground Water Elevations and Analytic Results - Shell Service Station WIC# 204-2495-0101, 1800 Powell Street, Emeryville, California (continued)

Well ID	Sampling Date	Top-of-Casing (ft msl)	Depth to Water (ft)	Separate-Phase Hydrocarbon Thickness (ft)	Ground Water Elevation (ft msl)	TDS	TPH-G	TPH-D	B	T	E	X
						<---------- parts per billion (µg/L) ---------->						
	07/07/87		10.38	---	2.21	---	1,500	---	880	10	6	160
	10/10/87		10.78	---	1.81	---	480	2,400	830	15	<0.5	120
	02/11/88		10.48	---	2.11	---	1,300	1,300	510	<10	<10	86
	05/10/88		9.48	---	3.11	---	1,000	1,300[d]	470	<0.5	<5	50
	08/31/88[SPH]		10.74	---	1.85	---	---	---	---	---	---	---
	12/03/88		10.3	---	2.29	---	900	2,400[d]	290	4.6	<2.5	20
	02/16/89		7.6	---	4.99	---	840[e]	1,200[d]	310	3.5	<2.5	27
	05/28/89[c]		10.6	---	1.99	---	2,100	4,600	1,100	19	50	350
	08/10/89[c]		10.58	---	2.01	---	900	2,300	230	16	6.9	65
	11/11/89		9.84	---	2.75	---	2,800	2,800	200	15	8.6	58
	02/21/94		9.26	---	3.33	---	700	1,800[f]	200	<5	<5	45
	05/16/94		9.62	---	2.97	---	650	1,700	180	2.5	<2.5	21
	08/08/94		**10.32**	**---**	**2.27**	**---**	**470**	**2,600[l]**	**12**	**1.5**	**0.5**	**14**
S-14	11/16/85	12.69	---	---	---	---	<250	400	3	<2	<2	<5
	01/03/86		---	---	---	---	<250	---	3	2	<2	<5
	04/22/87		---	---	---	---	1,200	18,000	7.4	2.7	15	110
	07/07/87		10.32	---	2.37	---	190	---	6.5	0.6	1.9	26
	10/10/87		10.77	---	1.92	---	4,900	21,000	7	1.2	<0.5	25
	02/11/88		10.4	---	2.29	---	370	12,000[e]	4.6	<2.5	<2.5	26
	05/10/88		9.66	---	3.03	---	660	2,200[d]	2.9	<2.5	<2.5	24
	08/31/88		10.74	---	1.95	---	700	7,900	3.2	<2.5	<2.5	15
	12/03/88		10.69	---	2.00	---	210	11,000[d]	<0.5	<0.5	0.8	6.8
	02/16/89		9.69	---	3.00	---	130[e]	5,700[d]	<0.5	<0.5	<0.5	4.4
	05/28/89		10.42	---	2.27	---	770	5,200	<0.5	<0.5	<0.5	4.5
	08/10/89		10.54	---	2.15	---	920	8,800	<1	<1	1.6	17
	11/11/89		9.91	---	2.78	---	710	28,000	20	57	25	69
	02/21/94		9.3	---	3.09	---	2,800	3,600	<5	<5	<5	14
	02/21/94		9.30	---	3.39	---	2,300[f]	3,600[g]	<5.0	<5	<5	14
	05/16/94		9.54	---	3.15	---	310	6,700	<2.5	<2.5	<2.5	3.1
	08/08/94		**10.29**	**---**	**2.4**	**---**	**480[k]**	**2,900[l]**	**<0.5**	**0.6**	**<0.5**	**0.8**
	08/08/94[dup]		**10.29**	**---**	**2.4**	**---**	**590[k]**	**2,900[l]**	**<0.5**	**0.6**	**<0.5**	**1.5**
Trip Blank	02/21/94		---	---	---	---	<50	<50	<0.5	<0.5	<0.5	<0.5
	02/24/94		---	---	---	---	<50	---	<0.5	<0.5	<0.5	<0.5
	05/16/94		---	---	---	---	<50	<50	<0.5	<0.5	<0.5	<0.5
	08/08/94		---	---	---	---	**<50**	---	**<0.5**	**<0.5**	**<0.5**	**<0.5**
DTSC MCLs				---		---	**NE**	**NE**	**1**	**100[c]**	**680**	**1,750**

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Table 1. Ground Water Elevations and Analytic Results - Shell Service Station WIC# 204-2495-0101, 1800 Powell Street, Emeryville, California (continued)

Abbreviations:

ft msl = Feet above mean sea level
TPH-G = Total petroleum hydrocarbons as gasoline by Modified EPA Method 8015
TPH-D = Total petroleum hydrocarbons as diesel by Modified EPA Method 8015
B = Benzene by EPA Method 8020
T = Toluene by EPA Method 8020
E = Ethylbenzene by EPA Method 8020
X = Xylenes by EPA Method 8020
NE = Not established
DTSC MCLs = California Department of Toxic Substances Control maximum contaminant levels for drinking water
<n = Not detected at detection limits of n ppb
dup = Duplicate sample
SPH = Separate-phase hydrocarbons present, often unable to measure thickness accurately
--- = Not analyzed/not measured

Notes:

a = Well inaccessible
b = Well abandoned on 11/09/85
c = DTSC recommended action level; MCL not established
d = Compounds detected within the chromatographic range appear to be weathered diesel
e = Compounds detected within the chromatographic range of gasoline but not characteristic of the standard gasoline pattern.
f = The concentrations reported as gasoline for samples S-12 and S-14 are primarily due to the presence of a discrete peak
g = The concentrations reported as diesel for samples S-12, S-13 and S-14 are due to the presence of a combination of diesel and a heavier petroleum product of hydrocarbon range C18 - C36, possibly motor oil
h = The result for gasoline is an unknown hydrocarbon which consists of several peaks
i = The positive result appears to be a heavier hydrocarbon than diesel
j = Compounds detected within the chromatographic range of diesel appears to include gasoline compounds.
k = The positive result appears to be a heavier hydrocarbon than gasoline
l = Maximum concentration suitable for domestic water supply as defined by Regional Water Quality Control Board Resolution #89-39.

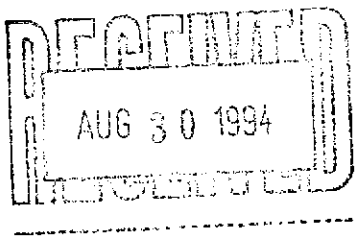
ATTACHMENT A

GROUND WATER MONITORING REPORT AND ANALYTIC REPORT

BLAINE
TECH SERVICES INC.

985 TIMOTHY DRIVE
SAN JOSE, CA 95133
(408) 995-5535
FAX (408) 293-8773

August 24, 1994



Shell Oil Company
P.O. Box 4023
Concord, CA 94524

Attn: Daniel T. Kirk

SITE:
Shell WIC #204-2495-0101
1800 Powell Street
Emeryville, California

QUARTER:
3rd quarter of 1994

QUARTERLY GROUNDWATER SAMPLING REPORT 940809-K-3

This report contains data collected during routine inspection, gauging and sampling of groundwater monitoring wells performed by Blaine Tech Services, Inc. in response to the request of the consultant who is overseeing work at this site on behalf of our mutual client, Shell Oil Company. Data collected in the course of our field work is presented in a TABLE OF WELL GAUGING DATA. The field information was collected during our preliminary gauging and inspection of the wells, the subsequent evacuation of each well prior to sampling, and at the time of sampling.

Measurements taken include the total depth of the well and the depth to water. The surface of water was further inspected for the presence of immiscibles which may be present as a thin film (a sheen on the surface of the water) or as a measurable free product zone (FPZ). At intervals during the evacuation phase, the purge water was monitored with instruments that measure electrical conductivity (EC), potential hydrogen (pH), temperature (degrees Fahrenheit), and turbidity (NTU). In the interest of simplicity, fundamental information is tabulated here, while the bulk of the information is turned over directly to the consultant who is making professional interpretations and evaluations of the conditions at the site.

STANDARD PROCEDURES

Evacuation

Groundwater wells are thoroughly purged before sampling to insure that the sample is collected from water that has been newly drawn into the well from the surrounding geologic formation. The selection of equipment to evacuate each well is based on the physical characteristics of the well and what is known about the performance of the formation in which the well has been installed. There are several suitable devices which can be used for evacuation. The most commonly employed devices are air or gas actuated pumps, electric submersible pumps, and hand or mechanically actuated bailers. Our personnel frequently employ USGS/Middleburg positive displacement pumps or similar air actuated pumps which do not agitate the water standing in the well.

Normal evacuation removes three case volumes of water from the well. More than three case volumes of water are removed in cases where more evacuation is needed to achieve stabilization of water parameters and when requested by the local implementing agency. Less water may be obtained in cases where the well dewaters and does not recharge to 80% of its original volume within two hours and any additional time our personnel have reason to remain at the site. In such cases, our personnel return to the site within twenty four hours and collect sample material from the water which has recharged into the well case.

Decontamination

All apparatus is brought to the site in clean and serviceable condition. The equipment is decontaminated after each use and before leaving the site. Effluent water from purging and on-site equipment cleaning is collected and transported to Shell's Martinez Manufacturing Complex in Martinez, California

Free Product Skimmer

The column headed, VOLUME OF IMMISCIBLES REMOVED (ml) is included in the TABLE OF WELL GAUGING DATA to cover situations where a free product skimming device must be removed from the well prior to gauging. Skimmers are installed in wells with a free product zone on the surface of the water. The skimmer is a free product recovery device which often prevents normal well gauging and free product zone measurements. The 2.0" and 3.0" PetroTraps fall into the category of devices that obstruct normal gauging. In cases where the consultant elects to have our personnel pull the skimmers out of the well and gauge the well, our personnel perform the additional task of draining the accumulated free product out of the PetroTrap before putting it back in the well. This

recovered free product is measured and logged in the VOLUME OF IMMISCIBLES REMOVED column. Gauging at such sites is performed in accordance with specific directions from the professional consulting firm overseeing work at the site on Shell's behalf.

Sample Containers

Sample material is collected in specially prepared containers which are provided by the laboratory that performs the analyses.

Sampling

Sample material is collected in stainless steel bailer type devices normally fitted with both a top and a bottom check valve. Water is promptly decanted into new sample containers in a manner which reduces the loss of volatile constituents and follows the applicable EPA standard for handling volatile organic and semi-volatile compounds.

Following collection, samples are promptly placed in an ice chest containing prefrozen blocks of an inert ice substitute such as Blue Ice or Super Ice. The samples are maintained in either an ice chest or a refrigerator until delivered into the custody of the laboratory.

Sample Designations

All sample containers are identified with a site designation and a discrete sample identification number specific to that particular groundwater well. Additional standard notations (e.g. time, date, sampler) are also made on the label.

Chain of Custody

Samples are continuously maintained in an appropriate cooled container while in our custody and until delivered to the laboratory under a standard Shell Oil Company chain of custody. If the samples are taken charge of by a different party (such as another person from our office, a courier, etc.) prior to being delivered to the laboratory, appropriate release and acceptance records are made on the chain of custody (time, date, and signature of the person releasing the samples followed by the time, date and signature of the person accepting custody of the samples).

Hazardous Materials Testing Laboratory

The samples obtained at this site were delivered to National Environmental Testing, Inc. in Santa Rosa, California. NET is a California Department of Health Services certified Hazardous Materials Testing Laboratory and is listed as DOHS HMTL #178.

Objective Information Collection

Blaine Tech Services, Inc. performs specialized environmental sampling and documentation as an independent third party. In order to avoid compromising the objectivity necessary for the proper and disinterested performance of this work, Blaine Tech Services, Inc. performs no consulting and does not become involved in the marketing or installation of remedial systems of any kind. Blaine Tech Services, Inc. is concerned only with the generation of objective information, not with the use of that information to support evaluations and recommendations concerning the environmental condition of the site. Even the straightforward interpretation of objective analytical data is better performed by interested regulatory agencies, and those engineers and geologists who are engaged in the work of providing professional opinions about the site and proposals to perform additional investigation or design remedial systems.

Reportage

Submission of this report and the attached laboratory report to interested regulatory agencies is handled by the consultant in charge of the project. Any professional evaluations or recommendations will be made by the consultant under separate cover.

Please call if we can be of any further assistance.

Richard C. Blaine

RCB/lp

attachments: table of well gauging data
chain of custody
certified analytical report

cc: Weiss Associates
5500 Shellmound Street
Emeryville, CA 94608-2411
ATTN: Michael Asport

TABLE OF WELL GAUGING DATA

WELL I.D.	DATA COLLECTION DATE	MEASUREMENT REFERENCED TO	QUALITATIVE OBSERVATIONS (sheen)	DEPTH TO FIRST IMMISCIBLES LIQUID (FPZ) (feet)	THICKNESS OF IMMISCIBLES LIQUID ZONE (feet)	VOLUME OF IMMISCIBLES REMOVED (ml)	DEPTH TO WATER (feet)	DEPTH TO WELL BOTTOM (feet)
S-5	8/9/94	INACCESSIBLE						
S-8	8/9/94	TOB	--	NONE	--	--	10.37	18.78
S-9	8/9/94	TOB	FREE PRODUCT	9.80	2.00	--	11.80	--
S-10	8/9/94	TOB	--	NONE	--	--	8.66	19.63
S-12	8/9/94	TOB	--	NONE	--	--	9.56	23.84
S-13	8/9/94	TOB	ODOR	NONE	--	--	10.32	20.60
S-14 *	8/9/94	TOB	ODOR	NONE	--	--	10.29	23.92

* Sample DUP was a duplicate sample taken from well S-14.

1056

SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD
Serial No: 940809-K3

Date: 8/9/94
Page 1 of 1

Site Address: 1800 Powell Street, Emeryville

WIC#: 204-2495-0101

Shell Engineer: Dan Kirk
Phone No.: (510) 675-6168
Fax #: 675-6160

Consultant Name & Address: Blaine Tech Services, Inc. 985 Timothy Drive San Jose, CA 95133

Consultant Contact: Jim Keller
Phone No.: (408) 995-5535
Fax #: 293-8773

Comments:

Sampled by: KCB / GDM

Printed Name: Keith Brown

Analysis Required

LAB: Net

CHECK ONE (1) BOX ONLY	CT/DT
Quarterly Monitoring [X]	5441
Site Investigation [ ]	5441
Soil Classify/Disposal [ ]	5442
Water Classify/Disposal [ ]	5443
Soil/Air Rem. or Sys. O & M [ ]	5452
Water Rem. or Sys. O & M [ ]	5453
Other [ ]	

TURN AROUND TIME
24 hours [ ]
48 hours [ ]
16 days [X] (Normal)
Other [ ]

NOTE: Notify Lab as soon as Possible of 24/48 hrs. TAT.

Sample ID	Date	Sludge	Soil	Water	Air	No. of conts.	TPH (EPA 8015 Mod. Gas)	TPH (EPA 8015 Mod. Diesel)	BTEX (EPA 8020/602)	Volatile Organics (EPA 8240)	Test for Disposal	Combination TPH 8015 & BTEX 8020	TDS		Asbestos	Container Size	Preparation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
S-8	8/9			W		2							X							

CUSTODY SEALED 8/10/94 G Lumbre
seal intact

Relinquished By (signature):	Printed Name:	Date: / Time:	Received (signature):	Printed Name:	Date: / Time:
[signature]	Keith Brown	Date: 8/10/94 Time: 1030	[signature]	G P LUMBRE	Date: 8/10/94 Time: 10:35
G Lumbre	G P LUMBRE	Date: 8/10 Time: 16:30			Date: Time:
(via NCS)		Date: Time:	[signature]	K Temple	Date: 8/11/94 Time: 0820

THE LABORATORY MUST PROVIDE A COPY OF THIS CHAIN-OF-CUSTODY WITH INVOICE AND RESULTS

NATIONAL ENVIRONMENTAL TESTING, INC.

Santa Rosa Division
435 Tesconi Circle
Santa Rosa, CA 95401
Tel: (707) 526-7200
Fax: (707) 526-9623

Jim Keller
Blaine Tech Services
985 Timothy Dr.
San Jose, CA 95133

Date: 08/16/1994
NET Client Acct. No: 1821
NET Pacific Job No: 94.03521
Received: 08/11/1994

Client Reference Information

SHELL, 1800 Powell St., Emeryvill, 940809-K3

Sample analysis in support of the project referenced above has been completed and results are presented on following pages. Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety. Please refer to the enclosed "Key to Abbreviations" for definition of terms. Should you have questions regarding procedures or results, please feel welcome to contact Client Services.

Approved by:

Judy Ridley FOR
Project Coordinator

Jim Hoch
Operations Manager

Enclosure(s)

Ref: SHELL, 1800 Powell St., Emeryvill, 940809-K3

SAMPLE DESCRIPTION: S-8
Date Taken: 08/09/1994
Time Taken:
NET Sample No: 211545

Parameter	Results	Flags	Reporting Limit	Units	Method	Date Extracted	Date Analyzed
Tot. Dissolved Solids (TFR)	4,500,000		10,000	ug/L	160.1		08/11/1994

Ref: SHELL, 1800 Powell St., Emeryvill, 940809-K3

METHOD BLANK REPORT

Parameter	Method Blank Amount Found	Reporting Limit	Units	Date Analyzed	Analyst Initials
Tot. Dissolved Solids (TFR)	ND	10	mg/L	08/11/1994	temp

Ref: SHELL, 1800 Powell St., Emeryvill, 940809-K3

LABORATORY CONTROL SAMPLE REPORT

Parameter	LCS % Recovery	RPD	LCS Amount Found	LCS Amount Expected	Units	Date Analyzed	Analyst Initials
Tot. Dissolved Solids (TFR)	98.4		984	1000	mg/L	08/11/1994	temp

KEY TO ABBREVIATIONS and METHOD REFERENCES

<	:	Less than; When appearing in results column indicates analyte not detected at the value following. This datum supercedes the listed Reporting Limit.
*	:	Reporting Limits are a function of the dilution factor for any given sample. Actual reporting limits and results have been multiplied by the listed dilution factor. **Do not** multiply the reporting limits or reported values by the dilution factor.
dw	:	Result expressed as dry weight.
mean	:	Average; sum of measurements divided by number of measurements.
mg/Kg (ppm)	:	Concentration in units of milligrams of analyte per kilogram of sample, wet-weight basis (parts per million).
mg/L	:	Concentration in units of milligrams of analyte per liter of sample.
mL/L/hr	:	Milliliters per liter per hour.
MPN/100 mL	:	Most probable number of bacteria per one hundred milliliters of sample.
N/A	:	Not applicable.
NA	:	Not analyzed.
ND	:	Not detected; the analyte concentration is less than the applicable listed reporting limit.
NTU	:	Nephelometric turbidity units.
RPD	:	Relative percent difference, 100 [Value 1 - Value 2]/mean value.
SNA	:	Standard not available.
ug/Kg (ppb)	:	Concentration in units of micrograms of analyte per kilogram of sample, wet-weight basis (parts per billion).
ug/L	:	Concentration in units of micrograms of analyte per liter of sample.
umhos/cm	:	Micromhos per centimeter.

Method References

Methods 100 through 493: see "Methods for Chemical Analysis of Water & Wastes", U.S. EPA, 600/4-79-020, Rev. 1983.

Methods 601 through 625: see "Guidelines Establishing Test Procedures for the Analysis of Pollutants" U.S. EPA, 40 CFR, Part 136, Rev. 1988.

Methods 1000 through 9999: see "Test Methods for Evaluating Solid Waste", U.S. EPA SW-846, 3rd edition, 1986., Rev. 1, December 1987.

SM: see "Standard Methods for the Examination of Water & Wastewater, 17th Edition, APHA, 1989.

Revised September, 1993
abb.93

COOLER RECEIPT FORM

Project: Shell 1800 Powell St. Emeryville Log No: _____
Cooler received on: 8/11/14 and checked on 8/11/14 by K Temple
(signature)

Were custody papers present?..... (YES) NO

Were custody papers properly filled out?..... (YES) NO

Were the custody papers signed?..... (YES) NO

Was sufficient ice used?..... (YES) NO 5.5°C

Did all bottles arrive in good condition (unbroken)?..... (YES) NO

Did bottle labels match COC?..... (YES) NO

Were proper bottles used for analysis indicated?..... (YES) NO

Correct preservatives used?..... (YES) NO

VOA vials checked for headspace bubbles?..... YES NO N/A
Note which voas (if any) had bubbles:*

Sample descriptor:	Number of vials:

*All VOAs with headspace bubbles have been set aside so they will not be used for analysis..... YES NO

List here all other jobs received in the same cooler:

Client Job #	NET log #

(coolerrec)

1658

SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD
Serial No: 940809-K3

Date: 8/9
Page 1 of 1

Site Address: 1800 Powell Street, Emeryville

WIC#: 204-2495-0101

Shell Engineer: Dan Kirk
Phone No.: (510) 675-6168
Fax #: 675-6160

Consultant Name & Address: Blaine Tech Services, Inc. 985 Timothy Drive San Jose, CA 95133

Consultant Contact: Jim Keller
Phone No.: (408) 995-5535
Fax #: 293-8773

Comments:

Sampled by: KCB / CDM

Printed Name: Keith Brown

LAB: Net

Sample ID	Date	Sludge	Soil	Water	Air	No. of conts.	TPH (EPA 8015 Mod. Gas)	TPH (EPA 8015 Mod. Diesel)	BTEX (EPA 8020/602)	Volatile Organics (EPA 8240)	Test for Disposal	Combination TPH 8015 & BTEX 8020			Asbestos	Container Size	Preparation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
S-8	8/9			W		3						X								
S-10						3						X								
S-12						5		X				X								
S-13						5		X				X			1					
S-14						5		X				X								
DUP						5		X				X								
EB						3						X								
TB	↓			↓		2					↓	X								

CUSTODY SEALED 8/10/94

Relinquished By (signature)	Printed Name	Date/Time	Received (signature)	Printed Name	Date/Time
	GRANT Home	Date: 8/10/94 Time: 1030			Date: 8/10 Time: 16:30
		Date: 8/10 Time: 16:30			Date: Time:
(VIA NCL)		Date: Time:		K. Temple	Date: 8/11/94 Time: 0800

THE LABORATORY MUST PROVIDE A COPY OF THIS CHAIN-OF-CUSTODY WITH INVOICE AND RESULTS

CHECK ONE (1) BOX ONLY		CT/01	TURN AROUND TIME
Quarterly Monitoring	X	6441	24 hours ☐
Site Investigation	☐	6441	48 hours ☐
Soil Closure/Disposal	☐	6442	15 days X (Normal)
Water Closure/Disposal	☐	6443	Other ☐
Soil/Air Rem. or Sys. O & M	☐	6442	NOTE: Notify Lab as soon as Possible of 24/48 hrs. TAT.
Water Rem. or Sys. O & M	☐	6443	
Other	☐		

NATIONAL ENVIRONMENTAL TESTING, INC.

Santa Rosa Division
435 Tesconi Circle
Santa Rosa, CA 95401
Tel: (707) 526-7200
Fax: (707) 526-9623

Jim Keller
Blaine Tech Services
985 Timothy Dr.
San Jose, CA 95133

Date: 08/22/1994
NET Client Acct. No: 1821
NET Pacific Job No: 94.03523
Received: 08/11/1994

Client Reference Information

SHELL, 1800 Powell St., Emeryville, 940809-K3

Sample analysis in support of the project referenced above has been completed and results are presented on following pages. Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety. Please refer to the enclosed "Key to Abbreviations" for definition of terms. Should you have questions regarding procedures or results, please feel welcome to contact Client Services.

Approved by:

Judy Ridley
Project Coordinator

Jim Hoch
Operations Manager

Enclosure(s)

Ref: SHELL, 1800 Powell St., Emeryville, 940809-K3

SAMPLE DESCRIPTION: S-8
Date Taken: 08/09/1994
Time Taken:
NET Sample No: 211547

Parameter	Results	Flags	Reporting Limit	Units	Method	Date Extracted	Date Analyzed
TPH (Gas/BTXE,Liquid)							
METHOD 5030/M8015	--						08/16/1994
DILUTION FACTOR*	1						08/16/1994
as Gasoline	400		50	ug/L	5030		08/16/1994
Carbon Range:	C5-C12						08/16/1994
METHOD 8020 (GC,Liquid)	--						08/16/1994
Benzene	27		0.5	ug/L	8020		08/16/1994
Toluene	6.6		0.5	ug/L	8020		08/16/1994
Ethylbenzene	ND		0.5	ug/L	8020		08/16/1994
Xylenes (Total)	18		0.5	ug/L	8020		08/16/1994
SURROGATE RESULTS	--						08/16/1994
Bromofluorobenzene (SURR)	126	MI		% Rec.	5030		08/16/1994

MI : Matrix Interference Suspected

Ref: SHELL, 1800 Powell St., Emeryville, 940809-K3

SAMPLE DESCRIPTION: S-10
Date Taken: 08/09/1994
Time Taken:
NET Sample No: 211548

Parameter	Results	Flags	Reporting Limit	Units	Method	Date Extracted	Date Analyzed
TPH (Gas/BTXE,Liquid)							
METHOD 5030/M8015	--						08/16/1994
DILUTION FACTOR*	1						08/16/1994
as Gasoline	700		50	ug/L	5030		08/16/1994
Carbon Range:	C5-C12						08/16/1994
METHOD 8020 (GC,Liquid)	--						08/16/1994
Benzene	57	FC	0.5	ug/L	8020		08/17/1994
Toluene	14		0.5	ug/L	8020		08/16/1994
Ethylbenzene	ND		0.5	ug/L	8020		08/16/1994
Xylenes (Total)	9.3		0.5	ug/L	8020		08/16/1994
SURROGATE RESULTS	--						08/16/1994
Bromofluorobenzene (SURR)	120			% Rec.	5030		08/16/1994

FC : Compound quantitated at a 10X dilution factor.

Ref: SHELL, 1800 Powell St., Emeryville, 940809-K3

SAMPLE DESCRIPTION: EB
Date Taken: 08/09/1994
Time Taken:
NET Sample No: 211549

Parameter	Results	Flags	Reporting Limit	Units	Method	Date Extracted	Date Analyzed
TPH (Gas/BTXE,Liquid)							
METHOD 5030/M8015	--						08/16/1994
DILUTION FACTOR*	1						08/16/1994
as Gasoline	ND		50	ug/L	5030		08/16/1994
Carbon Range:	--						08/16/1994
METHOD 8020 (GC,Liquid)	--						08/16/1994
Benzene	ND		0.5	ug/L	8020		08/16/1994
Toluene	ND		0.5	ug/L	8020		08/16/1994
Ethylbenzene	ND		0.5	ug/L	8020		08/16/1994
Xylenes (Total)	ND		0.5	ug/L	8020		08/16/1994
SURROGATE RESULTS	--						08/16/1994
Bromofluorobenzene (SURR)	97			% Rec.	5030		08/16/1994

Ref: SHELL, 1800 Powell St., Emeryville, 940809-K3

SAMPLE DESCRIPTION: TB
Date Taken: 08/09/1994
Time Taken:
NET Sample No: 211550

Parameter	Results	Flags	Reporting Limit	Units	Method	Date Extracted	Date Analyzed
TPH (Gas/BTXE,Liquid)							
METHOD 5030/M8015	--						08/16/1994
DILUTION FACTOR*	1						08/16/1994
as Gasoline	ND		50	ug/L	5030		08/16/1994
Carbon Range:	--						08/16/1994
METHOD 8020 (GC,Liquid)	--						08/16/1994
Benzene	ND		0.5	ug/L	8020		08/16/1994
Toluene	ND		0.5	ug/L	8020		08/16/1994
Ethylbenzene	ND		0.5	ug/L	8020		08/16/1994
Xylenes (Total)	ND		0.5	ug/L	8020		08/16/1994
SURROGATE RESULTS	--						08/16/1994
Bromofluorobenzene (SURR)	77			% Rec.	5030		08/16/1994

Ref: SHELL, 1800 Powell St., Emeryville, 940809-K3

SAMPLE DESCRIPTION: S-12
Date Taken: 08/09/1994
Time Taken:
NET Sample No: 211551

Parameter	Results	Flags	Reporting Limit	Units	Method	Date Extracted	Date Analyzed
TPH (Gas/BTXE,Liquid)							
METHOD 5030/M8015	--						08/16/1994
DILUTION FACTOR*	1						08/16/1994
as Gasoline	110	GX	50	ug/L	5030		08/16/1994
Carbon Range:	C5-C12						08/16/1994
METHOD 8020 (GC,Liquid)	--						08/16/1994
Benzene	ND		0.5	ug/L	8020		08/16/1994
Toluene	ND		0.5	ug/L	8020		08/16/1994
Ethylbenzene	ND		0.5	ug/L	8020		08/16/1994
Xylenes (Total)	2.2		0.5	ug/L	8020		08/16/1994
SURROGATE RESULTS	--						08/16/1994
Bromofluorobenzene (SURR)	99			% Rec.	5030		08/16/1994
METHOD M8015 (EXT., Liquid)						08/12/1994	
DILUTION FACTOR*	1						08/13/1994
as Diesel	3,500	DH	50	ug/L	3510		08/13/1994
Carbon Range:	C10-C28+						08/13/1994

DH : The positive result appears to be a heavier hydrocarbon than Diesel.
GX : The result for Gasoline is an unk. HC which consists of several peaks.

Ref: SHELL, 1800 Powell St., Emeryville, 940809-K3

SAMPLE DESCRIPTION: S-13
Date Taken: 08/09/1994
Time Taken:
NET Sample No: 211552

Parameter	Results	Flags	Reporting Limit	Units	Method	Date Extracted	Date Analyzed
TPH (Gas/BTXE,Liquid)							
METHOD 5030/M8015	--						08/16/1994
DILUTION FACTOR*	1						08/16/1994
as Gasoline	470		50	ug/L	5030		08/16/1994
Carbon Range:	C5-C12						08/16/1994
METHOD 8020 (GC,Liquid)	--						08/16/1994
Benzene	12	FC	0.5	ug/L	8020		08/17/1994
Toluene	1.5		0.5	ug/L	8020		08/16/1994
Ethylbenzene	0.5		0.5	ug/L	8020		08/16/1994
Xylenes (Total)	14		0.5	ug/L	8020		08/16/1994
SURROGATE RESULTS	--						08/16/1994
Bromofluorobenzene (SURR)	110			% Rec.	5030		08/16/1994
METHOD M8015 (EXT., Liquid)						08/12/1994	
DILUTION FACTOR*	1						08/13/1994
as Diesel	2,600	DH	50	ug/L	3510		08/13/1994
Carbon Range:	C10-C28+						08/13/1994

DH : The positive result appears to be a heavier hydrocarbon than Diesel.
FC : Compound quantitated at a 10X dilution factor.

Client Acct: 1821
Client Name: Blaine Tech Services
NET Job No: 94.03523

Date: 08/22/1994
ELAP Certificate: 1386
Page: 8

Ref: SHELL, 1800 Powell St., Emeryville, 940809-K3

SAMPLE DESCRIPTION: S-14
Date Taken: 08/09/1994
Time Taken:
NET Sample No: 211553

Parameter	Results	Flags	Reporting Limit	Units	Method	Date Extracted	Date Analyzed
TPH (Gas/BTXE,Liquid)							
METHOD 5030/M8015	--						08/16/1994
DILUTION FACTOR*	1						08/16/1994
as Gasoline	480	GH	50	ug/L	5030		08/16/1994
Carbon Range:	C5-C14						08/16/1994
METHOD 8020 (GC,Liquid)	--						08/16/1994
Benzene	ND		0.5	ug/L	8020		08/16/1994
Toluene	0.6		0.5	ug/L	8020		08/16/1994
Ethylbenzene	ND		0.5	ug/L	8020		08/16/1994
Xylenes (Total)	0.8		0.5	ug/L	8020		08/16/1994
SURROGATE RESULTS	--						08/16/1994
Bromofluorobenzene (SURR)	108			% Rec.	5030		08/16/1994
METHOD M8015 (EXT., Liquid)						08/12/1994	
DILUTION FACTOR*	1						08/13/1994
as Diesel	2,900	DH	50	ug/L	3510		08/13/1994
Carbon Range:	C10-C28+						08/13/1994

DH : The positive result appears to be a heavier hydrocarbon than Diesel.
GH : The positive result appears to be a heavier hydrocarbon than Gasoline.

Ref: SHELL, 1800 Powell St., Emeryville, 940809-K3

SAMPLE DESCRIPTION: DUP
Date Taken: 08/09/1994
Time Taken:
NET Sample No: 211554

Parameter	Results	Flags	Reporting Limit	Units	Method	Date Extracted	Date Analyzed
TPH (Gas/BTXE,Liquid)							
METHOD 5030/M8015	--						08/16/1994
DILUTION FACTOR*	1						08/16/1994
as Gasoline	590	GH	50	ug/L	5030		08/16/1994
Carbon Range:	C5-C14						08/16/1994
METHOD 8020 (GC,Liquid)	--						08/16/1994
Benzene	ND		0.5	ug/L	8020		08/16/1994
Toluene	0.6		0.5	ug/L	8020		08/16/1994
Ethylbenzene	ND		0.5	ug/L	8020		08/16/1994
Xylenes (Total)	1.5		0.5	ug/L	8020		08/16/1994
SURROGATE RESULTS	--						08/16/1994
Bromofluorobenzene (SURR)	105			% Rec.	5030		08/16/1994
METHOD M8015 (EXT., Liquid)						08/12/1994	
DILUTION FACTOR*	1						08/13/1994
as Diesel	2,900	DH	50	ug/L	3510		08/13/1994
Carbon Range:	C10-C28+						08/13/1994

DH : The positive result appears to be a heavier hydrocarbon than Diesel.
GH : The positive result appears to be a heavier hydrocarbon than Gasoline.

Ref: SHELL, 1800 Powell St., Emeryville, 940809-K3

CONTINUING CALIBRATION VERIFICATION STANDARD REPORT

Parameter	CCV Standard % Recovery	CCV Standard Amount Found	CCV Standard Amount Expected	Units	Date Analyzed	Analyst Initials
TPH (Gas/BTXE,Liquid)						
as Gasoline	113.0	1.13	1.00	mg/L	08/16/1994	lss
Benzene	102.4	5.12	5.00	ug/L	08/16/1994	lss
Toluene	98.6	4.93	5.00	ug/L	08/16/1994	lss
Ethylbenzene	96.8	4.84	5.00	ug/L	08/16/1994	lss
Xylenes (Total)	98.1	14.71	15.0	ug/L	08/16/1994	lss
Bromofluorobenzene (SURR)	97.0	97	100	% Rec.	08/16/1994	lss
TPH (Gas/BTXE,Liquid)						
as Gasoline	107.0	1.07	1.00	mg/L	08/16/1994	aal
Benzene	88.6	4.43	5.00	ug/L	08/16/1994	aal
Toluene	87.2	4.36	5.00	ug/L	08/16/1994	aal
Ethylbenzene	90.4	4.52	5.00	ug/L	08/16/1994	aal
Xylenes (Total)	88.7	13.3	15.0	ug/L	08/16/1994	aal
Bromofluorobenzene (SURR)	101.0	101	100	% Rec.	08/16/1994	aal
TPH (Gas/BTXE,Liquid)						
as Gasoline	98.0	0.98	1.00	mg/L	08/17/1994	aal
Benzene	99.4	4.97	5.00	ug/L	08/17/1994	aal
Toluene	103.8	5.19	5.00	ug/L	08/17/1994	aal
Ethylbenzene	100.2	5.01	5.00	ug/L	08/17/1994	aal
Xylenes (Total)	103.3	15.5	15.0	ug/L	08/17/1994	aal
Bromofluorobenzene (SURR)	99.0	99	100	% Rec.	08/17/1994	aal
METHOD M8015 (EXT., Liquid)						
as Diesel	108.9	1089	1000	mg/L	08/13/1994	tdn

Ref: SHELL, 1800 Powell St., Emeryville, 940809-K3

METHOD BLANK REPORT

Parameter	Method Blank Amount Found	Reporting Limit	Units	Date Analyzed	Analyst Initials
TPH (Gas/BTXE,Liquid)					
as Gasoline	ND	0.05	mg/L	08/16/1994	lss
Benzene	ND	0.5	ug/L	08/16/1994	lss
Toluene	ND	0.5	ug/L	08/16/1994	lss
Ethylbenzene	ND	0.5	ug/L	08/16/1994	lss
Xylenes (Total)	ND	0.5	ug/L	08/16/1994	lss
Bromofluorobenzene (SURR)	101		% Rec.	08/16/1994	lss
TPH (Gas/BTXE,Liquid)					
as Gasoline	ND	0.05	mg/L	08/16/1994	aal
Benzene	ND	0.5	ug/L	08/16/1994	aal
Toluene	ND	0.5	ug/L	08/16/1994	aal
Ethylbenzene	ND	0.5	ug/L	08/16/1994	aal
Xylenes (Total)	ND	0.5	ug/L	08/16/1994	aal
Bromofluorobenzene (SURR)	93		% Rec.	08/16/1994	aal
TPH (Gas/BTXE,Liquid)					
as Gasoline	ND	0.05	mg/L	08/17/1994	aal
Benzene	ND	0.5	ug/L	08/17/1994	aal
Toluene	ND	0.5	ug/L	08/17/1994	aal
Ethylbenzene	ND	0.5	ug/L	08/17/1994	aal
Xylenes (Total)	ND	0.5	ug/L	08/17/1994	aal
Bromofluorobenzene (SURR)	101		% Rec.	08/17/1994	aal
METHOD M8015 (EXT., Liquid)					
as Diesel	ND	0.05	mg/L	08/13/1994	tdn

Ref: SHELL, 1800 Powell St., Emeryville, 940809-K3

MATRIX SPIKE / MATRIX SPIKE DUPLICATE

Parameter	Matrix Spike % Rec.	Matrix Spike Dup % Rec.	RPD	Spike Amount	Sample Conc.	Matrix Spike Conc.	Matrix Spike Dup. Conc.	Units	Date Analyzed	Analyst Initials
TPH (Gas/BTXE,Liquid)										
as Gasoline	101.0	100.0	1.0	1.00	ND	1.01	1.00	mg/L	08/16/1994	aal
Benzene	96.9	97.2	0.3	32.1	ND	31.1	31.2	ug/L	08/16/1994	aal
Toluene	96.7	96.6	0.1	100.4	ND	97.1	97.0	ug/L	08/16/1994	aal
TPH (Gas/BTXE,Liquid)										
as Gasoline	108.0	101.0	6.7	1.00	ND	1.08	1.01	mg/L	08/16/1994	lss
Benzene	97.8	92.6	5.5	40.6	ND	39.7	37.6	ug/L	08/16/1994	lss
Toluene	97.9	94.9	3.1	84.4	ND	82.6	80.1	ug/L	08/16/1994	lss
TPH (Gas/BTXE,Liquid)										
as Gasoline	96.0	102.0	6.0	1.00	ND	0.96	1.02	mg/L	08/17/1994	aal
Benzene	108.6	113.2	4.1	34.9	ND	37.9	39.5	ug/L	08/17/1994	aal
Toluene	101.4	102.5	1.1	99.2	1.0	101.6	102.7	ug/L	08/17/1994	aal
METHOD M8015 (EXT., Liquid)										
as Diesel	78.0	67.5	14.4	2.00	0.82	2.38	2.17	mg/L	08/13/1994	tdn

Ref: SHELL, 1800 Powell St., Emeryville, 940809-K3

LABORATORY CONTROL SAMPLE REPORT

Parameter	LCS % Recovery	RPD	LCS Amount Found	LCS Amount Expected	Units	Date Analyzed	Analyst Initials
METHOD M8015 (EXT., Liquid)							
as Diesel	74.3		0.743	1.0	mg/L	08/13/1994	tdn

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KEY TO ABBREVIATIONS and METHOD REFERENCES

<	:	Less than; When appearing in results column indicates analyte not detected at the value following. This datum supercedes the listed Reporting Limit.
*	:	Reporting Limits are a function of the dilution factor for any given sample. Actual reporting limits and results have been multiplied by the listed dilution factor. **Do not** multiply the reporting limits or reported values by the dilution factor.
dw	:	Result expressed as dry weight.
mean	:	Average; sum of measurements divided by number of measurements.
mg/Kg (ppm)	:	Concentration in units of milligrams of analyte per kilogram of sample, wet-weight basis (parts per million).
mg/L	:	Concentration in units of milligrams of analyte per liter of sample.
mL/L/hr	:	Milliliters per liter per hour.
MPN/100 mL	:	Most probable number of bacteria per one hundred milliliters of sample.
N/A	:	Not applicable.
NA	:	Not analyzed.
ND	:	Not detected; the analyte concentration is less than the applicable listed reporting limit.
NTU	:	Nephelometric turbidity units.
RPD	:	Relative percent difference, 100 [Value 1 - Value 2]/mean value.
SNA	:	Standard not available.
ug/Kg (ppb)	:	Concentration in units of micrograms of analyte per kilogram of sample, wet-weight basis (parts per billion).
ug/L	:	Concentration in units of micrograms of analyte per liter of sample.
umhos/cm	:	Micromhos per centimeter.

Method References

Methods 100 through 493: see "Methods for Chemical Analysis of Water & Wastes", U.S. EPA, 600/4-79-020, Rev. 1983.

Methods 601 through 625: see "Guidelines Establishing Test Procedures for the Analysis of Pollutants" U.S. EPA, 40 CFR, Part 136, Rev. 1988.

Methods 1000 through 9999: see "Test Methods for Evaluating Solid Waste", U.S. EPA SW-846, 3rd edition, 1986., Rev. 1, December 1987.

SM: see "Standard Methods for the Examination of Water & Wastewater, 17th Edition, APHA, 1989.

Revised September, 1993
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COOLER RECEIPT FORM

Project: Shell 1800 Powell St. Emeryville Log No: _____
Cooler received on: 8/11/94 and checked on 8/11/94 by K. Temple
(signature)

Were custody papers present?..... YES NO
Were custody papers properly filled out?..... YES NO
Were the custody papers signed?..... YES NO
Was sufficient ice used?..... YES NO 5.5°C
Did all bottles arrive in good condition (unbroken)?..... YES NO
Did bottle labels match COC?..... YES NO
Were proper bottles used for analysis indicated?..... YES NO
Correct preservatives used?..... YES NO
VOA vials checked for headspace bubbles?..... YES NO
Note which voas (if any) had bubbles:*

Sample descriptor:	Number of vials:

*All VOAs with headspace bubbles have been set aside so they will not be used for analysis..... YES NO

List here all other jobs received in the same cooler:

Client Job #	NET log #

(coolerrec)